FACT SHEET FOR NPDES PERMIT WA0022918
AMERICAST TECHNOLOGIES, INC.
September 2008

PURPOSE of this Fact Sheet

This fact sheet explains and documents the decisions the Department of Ecology (Ecology) made in drafting the proposed National Pollutant Discharge Elimination System (NPDES) permit for Atlas Castings & Technology.

The Environmental Protection Agency (EPA) developed the NPDES permitting program as a tool to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." EPA delegated to Ecology the power and duty to write, issue, and enforce NPDES permits within Washington State. Both state and federal laws require any industrial facility to obtain a permit before discharging waste or chemicals to a water body.

An NPDES permit limits the types and amounts of pollution the permittee may discharge. Those limits are based either on (1) the pollution control or wastewater treatment technology available to the industry, or on (2) the receiving water's customary beneficial uses. This fact sheet complies with Section 173-220-060 of the Washington Administrative Code (WAC), which requires Ecology to prepare a draft permit *and accompanying fact sheet* for public evaluation before issuing an NPDES permit.

PUBLIC ROLE in the Permit

Ecology makes the draft permit and fact sheet available for public review and comment at least 30 days before we issue the final permit to the facility operator (WAC 173-220-050). Copies of the fact sheet and draft permit for AmeriCast Technologies (Atlas Castings & Technology), NPDES permit WA0022918, are available for public review and comment from August 26, 2008, until the close of business September 24, 2008. For more details on preparing and filing comments about these documents, please see

Appendix A - Public Involvement

Before publishing the draft NPDES permit, Atlas Castings & Technology, reviewed it for factual accuracy. Ecology corrected any errors or omissions about the facility's location, product type or production rate, discharges or receiving water, or its history.

After the public comment period closes, Ecology will summarize substantive comments and our responses to them. Ecology will include our summary and responses to comments to this Fact Sheet as

Appendix D - Response to Comments, and publish it when we issue the final NPDES permit. The rest of the fact sheet will not be revised, but the full document will become part of the legal history contained in the facility's permit file.

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INTRODUCTION

Table 1 - General Facility Information

Applicant:	AmeriCast Technologies, Inc.
Facility Name and Address:	Atlas Castings & Technology 3021 South Wilkeson Street Tacoma, Washington 98409
Type of Facility:	Sand Molding and Casting – Ferrous/Steel
Type of Treatment:	Discharge to Ground via Infiltration Basin
Discharge Location:	Onsite infiltration Pond Lat: 47° 14' 01" N, Long: 122° 27' 37" W Bypass to Thea Foss Waterway Lat: 47° 13' 58" N, Long: 122° 27' 36" W

The Federal Clean Water Act (FCWA, 1972, and later amendments in 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One mechanism for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), administered by the federal Environmental Protection Agency (EPA). The EPA authorized the state of Washington to manage the NPDES permit program in our state. Our state legislature accepted the delegation and assigned the power and duty for conducting NPDES permitting and enforcement to Ecology. The legislature defined Ecology's authority and obligations for the wastewater discharge permit program in 90.48 RCW (Revised Code of Washington).

Ecology adopted rules describing how we exercise our authority:

- Procedures Ecology follows for issuing NPDES permits (chapter 173-220 WAC),
- Water quality criteria for surface waters (chapter 173-201A WAC) and for ground waters (chapter 173-200 WAC)
- Sediment management standards (chapter 173-204 WAC).

These rules require any industrial facility operator to obtain an NPDES permit before discharging wastewater to state waters. They also define the basis for limits on each discharge and for other performance requirements imposed by the permit.

Under the NPDES permit program Ecology must prepare a draft permit and accompanying fact sheet, and make it available for public review. Ecology must also publish an announcement (public notice) telling people where they can read the draft permit, and where to send their comments on the draft permit, during a period of thirty days (WAC 173-220-050). (See **Appendix A--Public Involvement** for more detail about the Public Notice and Comment procedures). After the Public Comment Period ends, Ecology may make changes to the draft NPDES permit in response to comment. Ecology will summarize the responses to comments and any changes to the permit in **Appendix D.**

BACKGROUND INFORMATION

A. Facility Description

Atlas Castings and Technology, Inc. operates a sand molding and metal casting facility in Tacoma, Washington and has evolved to be one of the leading foundries in North America. The facility is located in the Nalley Valley Industrial area (see Figures 1 and 2). The NPDES permit authorizes the facility to discharge its stormwater to ground via an infiltration basin and to bypass to the city of Tacoma's storm sewer only when storm events are greater than the 2-year, 24-hour storm. The stormwater in this section of the City's storm sewers drains to the Thea Foss Waterway, Commencement Bay

Atlas produces castings in a size range from 10 to 48,000 pounds in over 130 different alloys including: carbon steel, low alloy steel, stainless steel, duplex, super duplex, super austenitic, and nickel base material. Primary markets include pump, valve, turbine, compressor, nuclear, navy shipbuilding, and offshore oil drilling. Atlas is also capable of fabrication, machining, heat treating, and non-destructive examination.

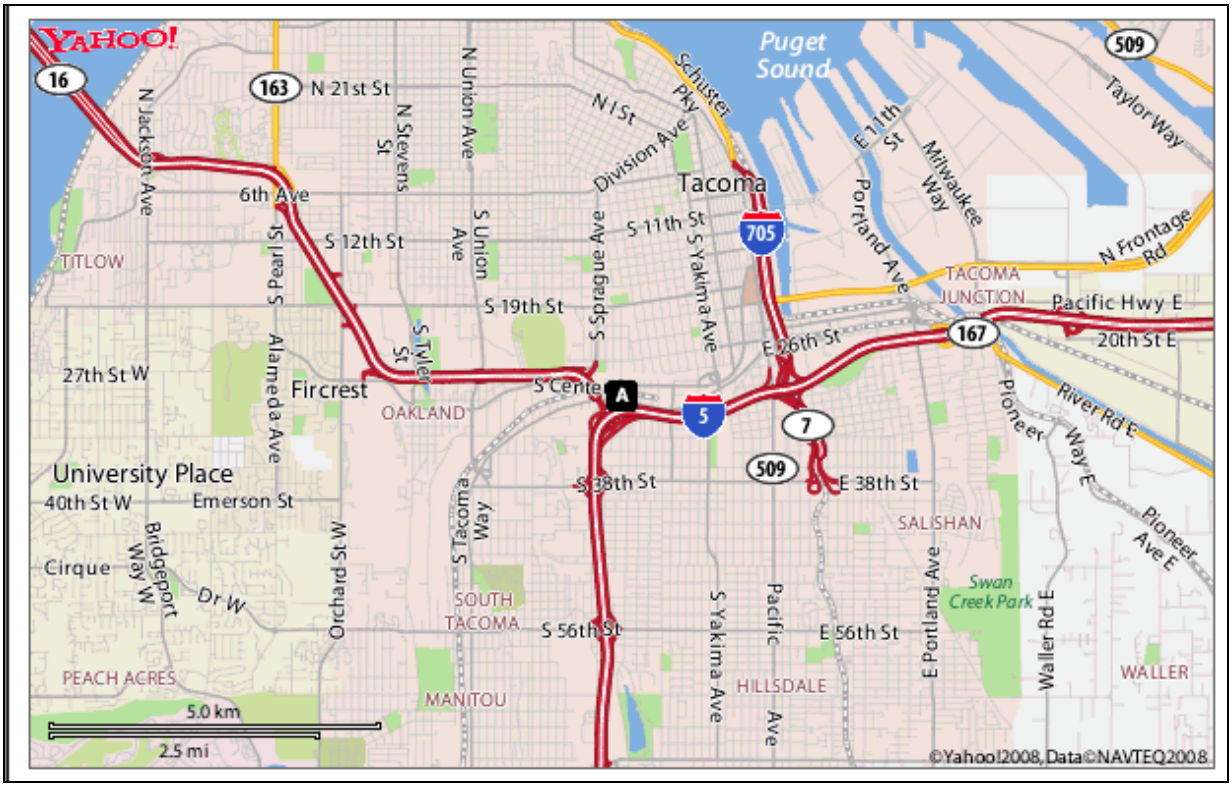

Figure 1. Vicinity Map.

Figure 2. Facility Location.

History

Facility Chronology

The foundry was established at the site in 1899 to produce iron castings for the northwest logging industry. In 1929, the facility began producing both steel and iron castings. Atlas continued to evolve throughout the years to be a major manufacturer of metal components. A brief timeline is provided as follows:

- In the 1940's, the facility added the first electric arc furnace which helped make maritime and industrial castings as part of the war effort.
- In the 1950's, the facility began making engineered pump castings for use in pipelines, refineries, and chemical plants.
- In the 1970's, it obtained ASME certification and began making castings for the nuclear power industry.
- In 1978, it installed an AOD refining system and an 8 MEV linear accelerator for heavy section radiography.
- In 1980, it entered into the turbine and compressor markets making large castings for both commercial land base and Naval applications.

- In the late 1980's, Atlas began developing high strength low alloy castings for the oil industry for use in offshore platforms. It also became qualified to produce HY-80 and HY-100 alloys for US Naval applications on surface ships and submarines.

- In 1996, Atlas purchased Quali-Cast Foundry in Chehalis, WA.

- In 2005, Atlas purchased Ideal Machining & Mfg., Inc. in Tacoma, WA.

AmeriCast Technologies, Inc. currently owns the facility and operates it under the name Atlas Castings and Technology, Inc. Atlas' facility falls under the EPA "minor facility" classification.

Permit Background

Atlas historically discharged stormwater via three outfalls (001, 002 & 003) to the City of Tacoma storm sewer which discharges to the head of the Thea Foss Waterway via two 96-inch diameter storm sewer outfall discharge pipes. Ecology originally permitted this discharge in August, 1991 as an industrial stormwater discharge to surface water.

In 1995, Ecology issued Atlas an Administrative Order and Penalty for violations to the NPDES Permit.

In April 1999, Atlas submitted an Engineering Report to Ecology to re-route stormwater to an infiltration basin with an engineered sand bed which filters stormwater before discharging to ground. Atlas submitted an application for a State Waste Discharge Permit with the proposal. Ecology approved the Engineering Report and a subsequent Addendum on April 14, 2000, and February 5, 2001, respectively.

Atlas completed construction of the infiltration basin and commenced stormwater discharge to ground in the spring of 2002 (consistent with Permit Special Condition S1.B that required Atlas to meet final effluent limits within 1 year of Ecology's approval of the Engineering Report).

The accompanying proposed permit re-authorizes the existing discharge to ground, establishes more stringent effluent limits for the discharge to ground and requires monitoring of surface waters during bypass events. Bypass to storm drains and surface water may occur to prevent flooding of the foundry. Atlas expects these bypass discharges to occur when storms produce runoff larger than the design storm of the on-site stormwater conveyance system. Engineers estimate that the conveyance system can handle runoff from storms at least as large as the 2-year, 24-hour storm, and potentially as large as the 10-year, 24-hour storm. Atlas's consultant sized the infiltration basin for the 25-year, 24-hour storm to provide an added factor of safety to the design (Kennedy Jenks, 2008).

The proposed permit does not authorize the facility to discharge process wastewater from the site. The City of Tacoma has also issued Atlas a "zero discharge" industrial wastewater permit.

Industrial Process

[**Ecology described the process using information from Kennedy Jenks, 2007 and 2008, and from Atlas' website.**]

Atlas manufactures a diversified range of carbon steel, low alloy steel, stainless steel, and nickel based alloy castings for power generation, petroleum, chemical, transportation, and metals refining industries. In this process, Atlas constructs a silica sand mold and core in the shape of the final product, melts the raw material supply in an electric furnace, and casts the molten material in the molds. Atlas then cools the castings (primarily air cooling) and cleans them by cutting, sand-blasting, and grinding. Some

castings are heat-treated in ovens, after which the facility cools them in quench tanks under controlled conditions. Figure 3 provides a site map of the facility.

Steel castings are produced from scrap steel. Atlas only purchases mild steel scrap for re-melting with no alloyed material or coatings such as zinc, paint, grease, or oils. It cannot permit contaminants such as lead, zinc, copper, and tin in the scrap steel because of the strict specifications for the steel produced by Atlas.

Atlas melts the steel in electric arc furnaces in the melt shop section of the foundry. It adds carbon, manganese, silicon, chromium, nickel, and molybdenum according to cast requirements. Other materials, which are less frequently added, include iron, aluminum, copper, and lime. During the casting process, certain metals with a very low standard free energy of formation of oxides, such as magnesium and aluminum, will oxidize and end up in the slag. Other metals with higher standard free energy of formation of oxides, such as lead and copper, will remain in the molten material. The facility uses an Argon Oxygen Decarburization (AOD) vessel to refine liquid metal to achieve better mechanical and corrosion resistant properties.

Molds and cores are constructed from sand in the molding section of the foundry prior to casting. The facility pours molten metal into the sand molds in the pour-and-shake and large molding areas. Employees separate the casting from the mold in the shake-out area and reclaim the casting.

Atlas transports the casting by forklift through the alley to the riser removal area inside near the heat treat area. Gates and risers are cast metal protrusions used to handle a casting during the molding process. The facility removes gates and risers prior to heat-treating the casting in gas-fired ovens. The casting is removed from the heat operation and is either air-quenched or water-quenched. Atlas plans to relocate the water quench tank in a new quench building. The air quench area is located in a paved outside section of the facility immediately north of the heat treat building.

Atlas then transports the casting by forklift through the alleys to the cleaning room (welding and grinding) for finishing. The casting may go through between one and four additional heat treat cycles while remaining in the cleaning room, depending on tempering requirements. The cleaning room contains heat treat equipment, blasting machines, welding, and inspection equipment.

Many castings demand a high level of quality assurance and quality control (QA/QC) because they are used for critical applications, including defense contracts. QA/QC activities include the use of metallurgy and radiography laboratories, and the use of dyes and magnetic particles for flaw testing. Atlas is equipped with an 8 mega electron volt (MeV) linear accelerator supplemented with one Cobalt and one Iridium radioactive source for RE, as well as UE, MPE, and LPE Non-Destructive Examination (NDE) capabilities.

Atlas also manages the machining and fabrication services for over half of the castings it produces.

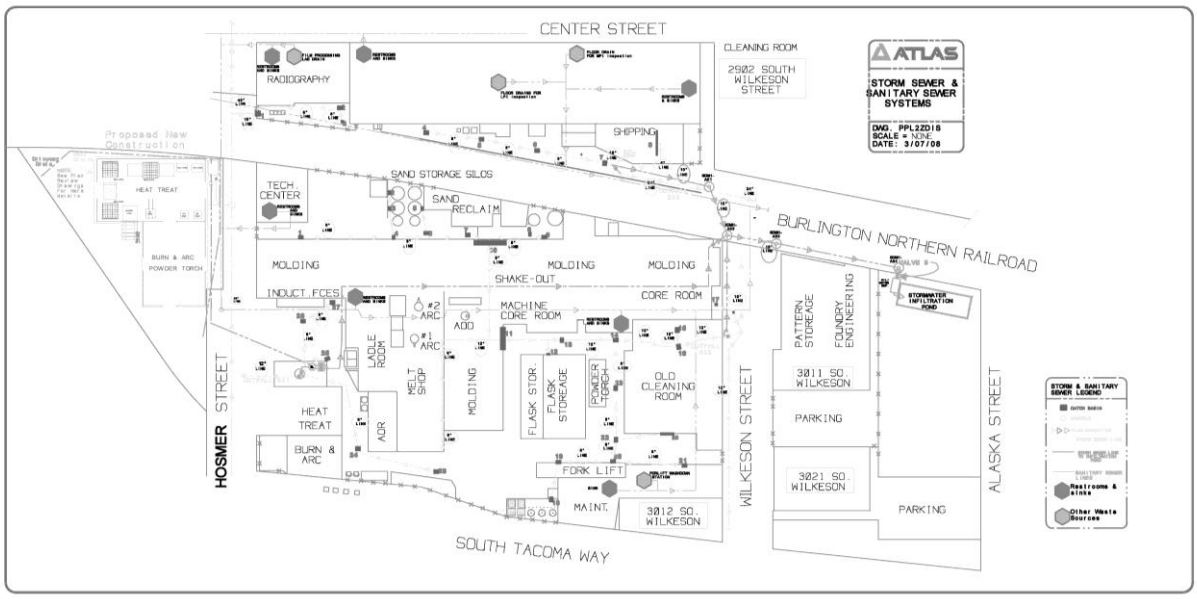

Figure 3. Facility Site Map.

Atlas shut down the water wash sand reclamation plant on January 1, 2002. Once Atlas changed the sand binding process to the phenolic urethane system it did not need the reclamation plant.

During 2007-2008, Atlas plans to construct a new quench building with a new quench tank to provide some additional pavement coverage. The roof drains from the new heat treat/burn & arc building will discharge to the City of Tacoma sanitary sewer. The facility will hold stormwater from the additional paved area in an equalization tank and then pump it (from a new pump station) directly to the infiltration basin. Ecology does not expect adverse impacts from this upgrade.

Atlas does not generate any process wastewater, and is permitted by the city of Tacoma Public Works/Environmental Services/Wastewater Management as a "zero discharge" industrial wastewater facility. Stormwater from the site is collected, treated and discharged to an infiltration basin and is regulated under an NPDES Permit by Ecology.

Stormwater Collection and Treatment System

Stormwater Collection System

Catch basins at the facility drain to three outfalls that discharge to the on-site stormwater infiltration basin. In the event of an unusually large storm that would exceed the capacity of the infiltration basin and potentially cause flooding at the facility, Atlas can bypass each or all of the outfalls to the city of Tacoma's stormwater system. Each outfall is equipped with a bypass valve that is typically left closed and manually opened by Atlas personnel if a bypass is necessary. So far, bypasses only occurred at Outfall 002. The City discharges stormwater to the Thea Foss Waterway. Atlas samples and tests all bypasses and reports results to Ecology as required by the permit. A schematic flow diagram is provided in Figure 4.

The drainage area for Outfall 001 is located in the southwestern portion of the facility. It includes drainage from the roof of the heat treat building, a portion of the foundry roof, the paved alleys between the heat treat building and the foundry, the air quench area, and the area in the vicinity of the dust collectors for the heat treat building. Castings are transported by forklift through this area, cooled in the

air quench area, and temporarily stored outside. Atlas also stores scrap metal in drums and tins in this area. The size of the drainage area is approximately 75,000 square feet. Potential pollutants from the area include diesel fuel, sand, trace metals, oils, and lubricants.

The drainage area for Outfall 002 includes a large portion of the foundry roof, the covered storage and forklift repair areas, alleys south and north of the foundry, the large casting riser removal building, and the sand storage and sand reclamation area. Forklifts carry castings through this drainage area. Liquid spills in the forklift repair or covered storage areas could flow into the storm drainage system through the front door, although these areas are protected from rainfall. The diesel storage tank and fueling area is also located in this drainage area, but is under cover and drains to a dead-end sump. Potential pollutants from this area include diesel fuel, sand, trace metals, oils, lubricants, and paints.

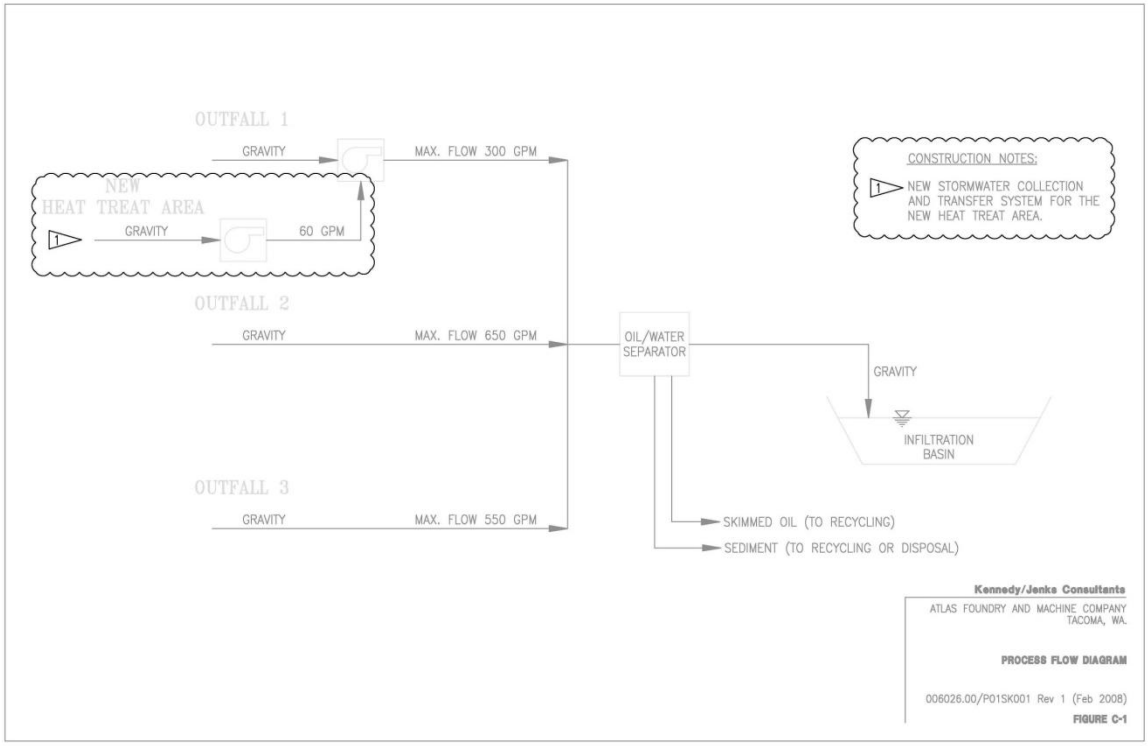

Figure 4. Schematic Flow Diagram.

The drainage area for Outfall 003 includes the roof of the welding and grinding building and the paved sidewalk immediately south of the building. Atlas transports castings by forklift on this sidewalk and temporarily stores some products on the pavement immediately south of the building. A covered loading dock on the eastern side of the building is used to load out finished products. Potential pollutants from this area include trace metals, oils, and lubricants.

Atlas routes stormwater from former outfalls 001, 002, and 003 to an on-site infiltration basin located on the east side of the property; the basin discharges to ground. These three outfalls can discharge individually to the City's storm sewer with manual operation of bypass valves if runoff exceeds conveyance system capacity. Such bypass flows would discharge via the Center Street main to the "twin 96ers" at the head of the Thea Foss Waterway. The three outfalls drain approximately 266,000 square feet (6 acres) of paved property.

Stormwater Treatment System

The site encompasses approximately 6.1 acres, the majority of which is covered by buildings or paved with asphalt or concrete. Stormwater is routed to catch basins that discharge to an oil/water separator that discharges to an on-site infiltration basin. A copy of the schematic flow diagram is provided in Figure 4. If the capacity of the infiltration basin is exceeded by a storm event, Atlas can manually bypass the system to the City of Tacoma's stormwater system.

Oil/Water Separator

The facility uses a coalescing medai oil/water (O/W) separator made by Utility Vault (Model 816-1-CPS)..

- Outfall 001 was designed for a peak flowrate of 300 gpm and a maximum surface loading rate of 0.0903 ft/min.

- Outfall 002 was designed for a peak flowrate of 500 gpm and a maximum surface loading rate of 0.0565 ft/min.

- Outfall 003 was designed for a peak flowrate of 250 gpm and a maximum surface loading rate of 0.0753 ft/min.

Infiltration Basin

Atlas controls pollutants in stormwater through implementation of best management practices (BMPs) and a treatment system consisting of an oil/water separator and an infiltration basin containing an engineered sand bed. These practices control particulate matter; the dissolved fraction of metals likely infiltrates to ground water. Dissolved metals can adsorb onto soil within the engineered sand bed depending upon retention time, metal concentration, type of metal and soil cation exchange capacity (CEC). Soil at the site consists of gravel (67.5 percent), sand (27.9 percent), and silt (4.6 percent). The CEC of the soil is low, approximately 6 meq/100g. Silt and fines in the engineered sand bed should assist adsorption.

The discharger's engineer analyzed the time for breakthrough, when concentrations of metals entering groundwater will equal the concentration discharging into the basin. Until breakthrough, soil and fines bind some fraction of the dissolved metals and limit their discharge to groundwater. The engineer's analysis, for individual metals in isolation, suggests that the time until breakthrough varies by metal from 5 to 10 years for copper and close to 3000 years for nickel, with breakthrough for other metals falling between these two.

Ecology included the predicted breakthrough times in the soil column for comparative purposes only and do not indicate actual breakthrough times for the matrix of metals in the water. Thus, Atlas will monitor the discharge to the pond as well as to groundwater to confirm that discharges to groundwater are within limits. Monitoring the discharge to the pond will confirm that the discharge concentrations do not exceed those used in predicting breakthrough and confirm the continued effectiveness of the BMPs. Groundwater monitoring will ensure compliance with groundwater standards and allow Atlas to react to "early warning values," as discussed later in this fact sheet.

Residual Solids

Approximately 99.6 percnet of the sand used in the foundry is mixed with phenolic urethane binders and used for constructing the molds and cores. Atlas makes small cores using sand mixed with Isocure binders (approximately 0.4 percent of the sand used at the foundry).

Atlas discontinued use of chromite sand as the primary sand in the production process. Previously, approximately one-third of the sand Atlas used was chromite sand, but now it uses less than 1 percent. The company reclaims its casting sand on-site.

On-site sand reclamation takes place at the shake-out system. Molds, cores, and sand lumps are broken down to granular sand by vibratory tables, screens, tubs, and conveyors. The facility re- uses about 68% of this sand for mold-making. It thermally reclaims the other 32 percent (residual binders are burned off) for use in the facing surfaces of the molds.

Solid waste generated at the foundry consists of the following: sand reclamation waste, slag, refractories, ceramic tile, and dust collector dust. Atlas sends all dust collector (DC) dust, except arc furnace dust, to the LRI Landfill located in Graham, WA. Arc furnace dust is returned to the melting process.

B. Ground Water

Hydrogeology Based on Previous Investigations

The facility has installed several monitoring wells over the years to assess different suitable locations for the infiltration basin. Atlas installed six of these wells (2 sets of 3 wells) to conduct groundwater infiltration studies. Two Kennedy/Jenks preliminary infiltration assessment reports include the location and the test results from these wells. The first, issued on October 12, 1998, describes three wells located adjacent to the Atlas Technical Center, at a site that apparently was never used. The second report, issued on October 26, 2000, describes three wells drilled just east of the Foundry Engineering building at the eventual site of the stormwater infiltration pond.

In 2001, Atlas abandoned two of the three monitoring wells east of the Foundry Engineering building. The facility may have retained and incorporated the third upgradient well into the long-term groundwater monitoring program. In 2002, two new groundwater monitoring wells were drilled downgradient of the infiltration basin. In 2008, based upon Ecology requests, Atlas had these monitoring wells surveyed and vertically tied together. The upgradient well is labeled MW 1, and the two downgradient wells are labeled MW2, and MW 3.

The monitoring well as-built drawings describe three, 40-foot deep, monitoring wells installed on April 1, 2002, named AHA737, AHA738, and AHA739. The locations of those wells are indicated on Figure 5.

According to Kennedy/Jenks 2000 report, the lithology encountered in the area was well-graded gravel with sand and some silt from 0 to 15 feet below ground surface (bgs). This included poorly graded medium to fine sand below approximately 15 to 20 feet bgs. Contact between the two lithologies occurred between 10 and 20 feet bgs and appeared to be gradational. Groundwater was encountered approximately 30 feet bgs in all three wells.

Using the quarterly depth-to-water data collected over the past five years and the elevation information provided, Ecology calculated gradients from MW-1 to MW-2 (easterly) ranging from 0.002 to 0.01. Similarly, gradients from MW-1 to MW-3 (easterly) ranged from 0.0004 to 0.01. This generally agrees with the information presented in the 2000 Kennedy/Jenks report which indicates a 0.003 ft/ft groundwater gradient beneath the site with a bearing of about S78°E.

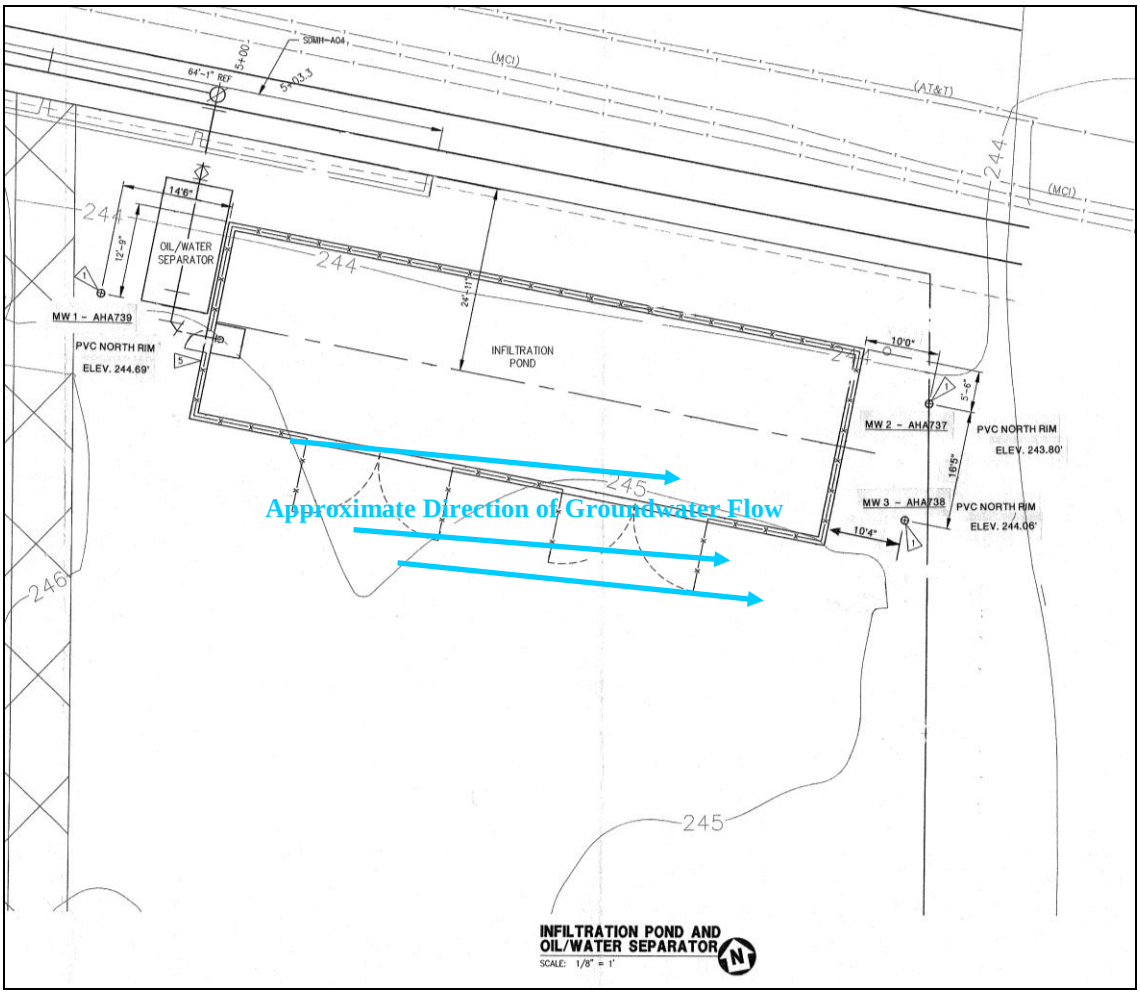

Figure 5. Monitoring Well Designations and Locations.

Water Quality Data

As a requirement of its current permit Atlas submits quarterly water quality results for its stormwater discharges and its three monitoring wells. The highest values for those data submitted since 2002 are presented below. The data for the monitoring wells are provided in Table 2. In the table, the maximum concentrations which were measured during the time period are summarized. Bold-faced type denotes values which exceed Chapter 173-200 WAC criteria or Enforcement Limits.

Table 2. Monitoring well data for analyses of samples collected 7/1/03 through 10/1/07

	Bis(2-ethylhexyl)phthalate (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)	Zinc (ug/L)	Oil & Grease (mg/L)	pH MAX (s.u.)	pH MIN (s.u.)
MW-1	**15**	46	7	40	130	2.5	6.56	**5.12**
MW-2	**7, 14 & 17**	27	3	15	110	3.2	6.4	**5.32**
MW-3	**11**	53	9	15	110	3.2	6.2	**4.75**
GW Criteria	6	1,000	50		5,000		8.5	6.5
Enforcement Limit		60	10	100	660			
Early Warning Value				75	340			

The data provided by Atlas for its monitoring wells indicate Bis(2-ethylhexyl)phthalate (BEP) and pH levels exceed the criteria established in Chapter 173-200 WAC. Exceedances of the 6 ug/L Chapter 173-200 WAC BEP criteria occurred once in MW-1 and MW-3, and three times in MW-2. The data indicate pH failed to meet the low end of the range value of 6.5 standard units (su) Water Quality Standards criteria during the entire period sampled period. It should be noted that the upgradient well suggests that groundwater quality already exceeded the BEP and pH criteria and that Atlas may not be further degrading groundwater quality for these two parameters.

Based on the information presented in the 2000 Kennedy/Jenks report, the groundwater gradient beneath the site is easterly. A plot of pH for all three monitoring wells confirms that MW-1 data has the lowest values and pH values are increasing downgradient from the infiltration basin (see Figure 6). This correlates well with the pH values measured in Outfall 004 (infiltration basin influent) that are higher than those measured in MW 1.

A comparison of the other monitored parameters do not provide as much of a clear relationship between the monitoring wells as pH does. This is most likely due to the higher variability of sampling and analytical error inherent in collecting low level metals and BEP data.

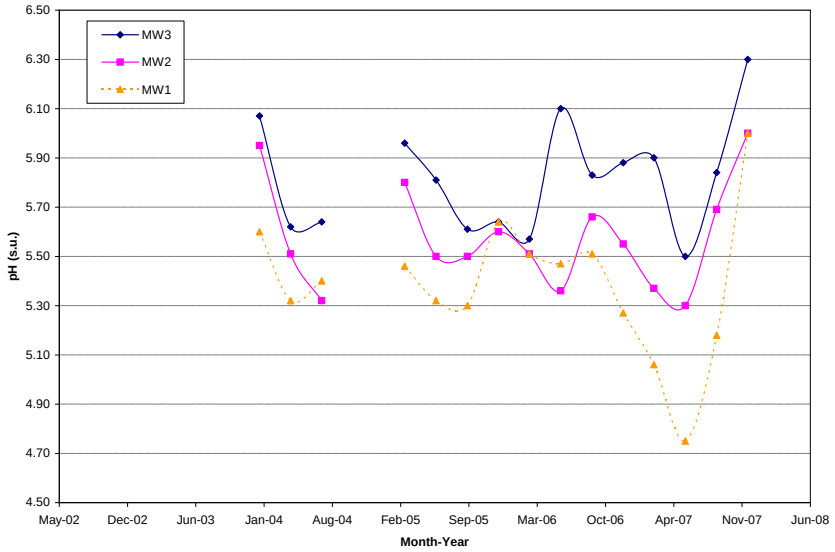

Figure 6. Comparison of pH Values of the Groundwater Monitoring Wells.

C. Permit Status

Atlas submitted an application for permit renewal on April 8, 2007, and an amendment on June 26, 2007. Ecology accepted the application as complete on July 9, 2007.

Ecology originally issued a permit for this facility on August 9, 1991. Since that time, the permit has been renewed two times. This proposed permit is considered the fourth permit renewal. Ecology issued the previous permit for this facility on December 5, 2002. The previous permit placed effluent limits on:

Stormwater Discharge to City Storm Sewer – Prohibited except for authorized bypasses.

Discharge to Infiltration Basin – Copper, Lead, Nickel, Zinc, Oil & Grease, and pH

Groundwater Enforcement Limits – Copper, Lead, Nickel, and Zinc

Groundwater Early Warning Values – Nickel, and Zinc

D. Summary of Compliance with Previous Permit Issued

Ecology staff last conducted a non- sampling compliance inspection on May 15, 2008.

Atlas's stormwater treatment discharge has, for the most part, been in compliance during the history of the permit issued on December 5, 2002. Ecology assessed facility compliance based on our review of the facility's Discharge Monitoring Reports (DMRs) and on inspections conducted by Ecology.

The incidents of non-compliance were noted as follows:

Infiltration Basin Limits

- December 2003 - Exceeded the maximum pH limit of 9.0 standard units (s.u.) – the reported monitoring result was 9.03 s.u.

- October 2004 - Exceeded the minimum pH limit of 6.5 su. – the reported monitoring result was 6.35 s.u. Note that Ecology later modified the minimum pH limit to 6.0 s.u. due to acidic rainfall in the area.

- September 2005 - Exceeded the minimum pH limit of 6.5 s.u. – the reported monitoring result was 6.39 s.u. It should be noted that the minimum pH limit was later modified to be 6.0 s.u. due to acidic rainfall in the area.

- December 2005 – Exceeded the lead limit of 53 µg/L – the reported monitoring result was 240 µg/L.

- December 2005 – Exceeded the zinc limit of 1,455 µg/L – the reported monitoring result was 1,600 µg/L.

- December 2005 – Exceeded the maximum pH limit of 9.0 s.u. – the reported monitoring result was 9.15 s.u.

Groundwater Enforcement Limits

- January 2003 – Exceeded the maximum Bis(2-ethylhexyl)phthalate (BEP) limit of 10 µg/L for groundwater monitoring well MW2 – the reported monitoring result was 14 µg/L.

- April 2003 – Exceeded the maximum Bis(2-ethylhexyl)phthalate (BEP) limit of 10 µg/L for groundwater monitoring well MW2 – the reported monitoring result was 17 µg/L.

- January 2004 – Exceeded the maximum Bis(2-ethylhexyl)phthalate (BEP) limit of 10 µg/L for groundwater monitoring well MW3 – the reported monitoring result was 11 µg/L.

Note that Ecology later removed the BEP groundwater enforcement limit from the permit as part of a formal modification. Conclusive evidence showed that Atlas did/does not contribute BEP from their discharge or their site.

E. Wastewater Characterization

The concentration of pollutants, used for this characterization, was from DMRs submitted for the months from January 2003 through February 2008. The stormwater discharge reflects pollutant source reduction and prevention measures utilized through the use of best management practices as part of their Stormwater Pollution Prevention Plan. The stormwater is characterized as follows:

Table 3. Wastewater Characterization for Discharge to Infiltration Basin.

Parameter	Average	Maximum
Flow (gal/month)	54,843	340,866
Oil and Grease (mg/L)	3	10
Total Copper (µg/L)	60	240
Total Lead (µg/L)	10	240
Total Nickel (µg/L)	73	360
Total Zinc (µg/L)	258	1,600
Bis(2-ethylhexyl)phthalate (µg/L)	6	10
pH (s.u.)	Range: 6.35 – 9.15; Average: 7.96	

The timeframe selected for characterizing the bypasses is from January 2003 through February 2008. Bypasses did not occur in 2003 and 2004. Ecology could not calculate wasteloads discharged from the bypasses because the facility did not measure bypass volumes in the previous permit cycle; therefore, no data on bypass volumes exist. The proposed permit requires the facility to measure or estimate flow to the infiltration basin. Pollutant loads from the bypasses will be assessed in the future during the next permit renewal process.

Table 4. Wastewater Characterization for Bypass Discharges of Outfalls 001, 002 and/or 003.

Parameter	Average Bypass Concentration	Other Value
Number of Bypasses		19
Average Duration of Bypasses (hrs)		4.5
Total Duration of Bypasses (hrs)		85.1
Oil and Grease (mg/L)	5	
Total Copper (µg/L)	89	
Total Lead (µg/L)	33	
Total Nickel (µg/L)	168	
Total Zinc (µg/L)	501	
Bis(2-ethylhexyl)phthalate (µg/L)	73	
pH (s.u.)	Range: 7.44-9.76; Average: 8.64	

III. PROPOSED PERMIT CONDITIONS

Federal and State regulations require that limitations set forth in an NPDES permit must be either technology- or water quality-based.

- Technology-based limits are based upon the treatment methods available to treat specific pollutants. Technology-based limits are set by the EPA and published as a regulation, or Ecology develops the limit on a case-by-case basis (40 CFR 125.3, and chapter 173-220 WAC).

- Water quality-based limits are calculated so that the effluent will comply with the Surface Water Quality Standards (chapter 173-201A WAC), Ground Water Standards (chapter 173-200 WAC), Sediment Quality Standards (chapter 173-204 WAC) or the National Toxics Rule (40 CFR 131.36).

- Ecology must apply the most stringent of these limits to each parameter of concern.

The limits in this permit reflect information received in the application. Ecology evaluated the permit application and determined the limits needed to comply with the rules adopted by the State of Washington. Ecology does not develop effluent limits for all reported pollutants**.** Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation.

Nor does Ecology usually develop permit limits for pollutants that were not reported in the permit application but that may be present in the discharge. The permit does not authorize discharge of the non-reported pollutants. During the five-year permit term, the facility's effluent discharge conditions may change from those conditions reported in the permit application. The facility must notify Ecology, as described in 40 CFR 122.42(a), if significant changes occur in any constituent. Industries may be in violation of their permit until the permit is modified to reflect additional discharge of pollutants.

Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the state. The minimum requirements to demonstrate compliance with the AKART standard were determined in the engineering report: Atlas Foundry and Machine Company – Draft Engineering Report, 1999 (K/J 976075.04).

The permit includes limitations on the quality of the wastewater applied to the infiltration basin that have been determined to protect the quality of the ground water. The approved engineering report includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Quality Standards (Chapter 173-200 WAC).

A. Technology-Based Effluent Limits

All waste discharge permits issued by Ecology must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). The following permit limitations are necessary to satisfy the requirement for AKART:

Total Copper – The proposed permit lowers the maximum daily technology-based limit established in the existing permit from 561 µg/L to 289 µg/L. Ecology based this limit on recent performance data from the facility which demonstrates improved control of copper pollution through implementation of best management practices and source control methods.

Total Lead – The proposed permit recommends keeping the maximum daily technology-based limit established in the existing permit of 53 µg/L. Ecology based this limit on performance data from the facility which reflect the control of lead through implementation of their best management practices and source control methods. Ecology conducted a new performance-based analysis using more recent data and the results support the decision to maintain the previous limits.

Total Nickel - The proposed permit lowers the maximum daily technology-based limit established in the existing permit from 659 µg/L to 363 µg/L. Ecology based this limit on recent performance data from the facility which demonstrates improved control of nickel pollution through implementation of best management practices and source control methods.

Total Zinc - The proposed permit lowers the maximum daily technology-based limit established in the existing permit from 1,455 µg/L to 1,294 µg/L. Ecology based this limit on recent performance data from the facility which demonstrates improved control of zinc pollution through implementation of best management practices and source control methods.

Oil & Grease - The existing permit established a technology-based oil and grease monthly average limit of 10 mg/L and a daily maximum limit of 15 mg/L. Ecology retains this limit in the proposed permit. This limit reflects effluent quality that the facility can achieve using a properly operated and maintained oil/water separator or other equivalent control technology.

pH - A technology-based pH limit of 6.0 to 9.0 standard units is retained in the proposed permit.

B. Ground Water Quality-Based Effluent Limitations

It is the policy of the state of Washington to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and enjoyment, and the protection of aquatic life and wildlife; RCW 90.48. This antidegradation policy mandates the protection of background ground water quality and prevents the degradation of water quality that would harm an existing or future beneficial use [refer to WAC 173-200-030].

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. The goal of the ground water quality standards is to maintain the highest quality of the State's ground waters and to protect existing and future beneficial uses of the ground water through the reduction or elimination of the discharge of contaminants to ground water [WAC 173-200-010(4)]. This goal is achieved by [refer to Implementation Guidance for the Ground Water Quality Standards, Abstract, page x (Ecology, Revised October 2005)]:

1. Applying AKART (all known available and reasonable methods of prevention, control and treatment) to any discharge;
2. Applying the antidegradation policy of the ground water quality standards. This policy mandates protecting background water quality to the extent practicable and preventing degradation of water quality which would harm a beneficial use or violate the ground water quality standards; and
3. Establishing numeric and narrative criteria for the protection of human health and the environment in the ground water quality standards.

The procedures for estimating background water quality are contained in the *Implementation Guidance for the Ground Water Quality Standards* (Ecology, Revised October 2005). Background water quality is defined as the 95 percent upper tolerance interval with a 95 percent confidence.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

Table 5: Ground Water Quality Criteria

Parameter	Criteria
pH	6.5 to 8.5 standard units
Total Dissolved Solids	500 mg/L
Total Copper	1.0 mg/L

Parameter	Criteria
Total Lead	0.05 mg/L
Total Zinc	5.0 mg/L
Bis(2-ethylhexyl)phthalate	6.0 µg/L

Ecology has reviewed the ground water monitoring data and has determined that the ground water enforcement limits and early warning values for nickel and zinc can be made more stringent. Based on the monitoring data, Atlas should still be able to meet the new lower enforcement limits and early warning values. More stringent limits should better protect the existing ground water quality.

A review of the copper and lead ground water data suggested that the previous enforcement limits were set adequately. As such, the proposed permit adopted the previous copper and lead enforcement limits.

The resultant effluent limits are as follows:

Table 6: Ground Water Quality Limitations.

Parameter	WAC 173-200 GW Criteria	Enforcement Limitation	Early Warning Value
Total Copper (µg/L)	1,000	60	
Total Lead (µg/L)	50	10	
Total Nickel (µg/L)		75	50
Total Zinc (µg/L)	5,000	200	150

Antidegradation

The Antidegradation policy within the State of Washington's Ground Water Quality Standards requires that beneficial uses of ground water be preserved. In cases where ground water quality is above the criteria, the background concentrations shall constitute the water quality criteria. In these cases, discharges to ground water shall not degrade the existing water quality. When the ground water quality is below the criteria, the existing water quality shall be protected. More information on the Antidegradation Policy can be obtained by referring to WAC 173-200-030.

C. Comparison of Limitations with the Existing Permit Issued on 12-05-2002 as Modified 09-01-2004 and 01-11-2006

This proposed permit establishes more stringent effluent limits for: total copper, total nickel, and total zinc. The permit also establishes more stringent groundwater quality enforcement limits and early warning values for total nickel, and total zinc.

The groundwater monitoring well MW 1 has been established as the upgradient well. Therefore, the proposed permit only applies the groundwater enforcement limits and early warning values to MW 2 and MW 3.

Table 7: Comparison of Previous Effluent Limits and Proposed Effluent Limits.

Parameter	Previous Limits	Proposed Limits
Outfall 004		
Total Copper, µg/L	561	289
Total Lead, µg/L	53	Same
Total Nickel, µg/L	659	363
Total Zinc, µg/L	1,455	1,294

Parameter	Previous Limits	Proposed Limits
Oil & Grease, mg/L	15 (10)	Same
pH, s.u.	6.0 to 9.0	Same
Note: All limits are maximum daily limits. Value in parenthesis is an average monthly limit.		

Table 8. Comparison of Previous Groundwater Enforcement Limits and Early Warning Values with Proposed Limits and Values.

Parameter	Previous Limits	Proposed Limits
MW 2 and MW 3		
Total Copper, µg/L	60	Same
Total Lead, µg/L	10	Same
Total Nickel, µg/L	100 (75)	75 (50)
Total Zinc, µg/L	660 (340)	200 (150)
Note: All limits are provided as groundwater enforcement limits. Values in parenthesis are early warning values.		

IV. MONITORING REQUIREMENTS

Ecology requires monitoring, recording, and reporting (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly, that ground water criteria are not violated, that effluent limitations are being achieved (WAC 173-216-110), and that the discharge complies with the permit's effluent limits.

The monitoring schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

Monitoring is required at Outfall #004 for stormwater discharges to the infiltration basin, any bypasses which may occur at Outfalls #001, #002, and/or #003, and at groundwater monitoring wells MW1, MW2, and MW3.

A. Wastewater Monitoring

Stormwater effluent to the infiltration basin (Outfall 004) entails monitoring for the following parameters: flow, pH, oil & grease, total copper, total lead, total nickel, total zinc, and Bis(2-ethylhexyl)phthalate

Bypass monitoring of Outfalls 001, 002, and/or 003 entails monitoring for the following parameters: flow, duration, date(s) of bypass, 24-hour rainfall, pH, oil & grease, total suspended solids, total copper, total lead, total nickel, total zinc, and Bis(2-ethylhexyl)phthalate. Bypass monitoring is required for each occurrence of a bypass. Flow and duration of the bypass will be used to calculate the pollutant loads being discharged from each bypass for future evaluation.

B. Ground Water Monitoring

The monitoring of ground water at the site is required in accordance with the Ground Water Quality Standards, Chapter 173-200 WAC. Ecology has determined that this discharge has a potential to pollute the ground water. Therefore the Permittee is required to evaluate the impacts on ground water quality. Monitoring of the ground water at the site boundaries and within the site is an integral component of such an evaluation.

Groundwater monitoring entails monitoring for the following parameters: water elevation, pH, conductivity, total iron, ferrous iron, total dissolved solids, total copper, total lead, total nickel, total zinc, and Bis(2-ethylhexyl)phthalate.

Oil and grease is no longer required to be monitored since it is unreasonable to expect oil and grease to be present in groundwater. The majority of the groundwater data resulted in non-detectable concentrations of oil and grease. Ecology highly suspects that previous results of oil and grease that were above detection limits were due to sampling and/or analytical error.

C. Lab Accreditation

Ecology requires that all monitoring data (with the exception of certain parameters) must be prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, *Accreditation of Environmental Laboratories.*

V. OTHER PERMIT CONDITIONS

A. Reporting and Recordkeeping

Ecology based permit Special Condition S3 on our authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

B. Operations & Maintenance Manual

The proposed permit contains Special Condition S.4 as authorized under Chapter 173-240-150 WAC and Chapter 173-216-110 WAC. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

Atlas Castings and Technology is required to continue to review, update, and utilize their Operations & Maintenance Manual. Annual review confirmation letters are required as part of this proposed permit.

C. Solid Waste Control Plan

Atlas Castings and Technology could cause pollution of the waters of the state through inappropriate disposal of solid waste or through the release of leachate from solid waste.

This proposed permit requires this facility to update the approved solid waste control plan designed to prevent solid waste from causing pollution of waters of the state. The updated plan must be submitted to Ecology for approval (RCW 90.48.080).

D. Spill Plan

This facility stores a quantity of chemicals on-site that have the potential to cause water pollution if accidentally released. Ecology can require a facility to develop best management plans to prevent this accidental release [section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080].

Atlas Castings and Technology developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the facility to update this plan and submit it to Ecology.

E. Stormwater Pollution Prevention Plan

Ecology requires Atlas Castings and Technology to continue to review, update, and follow the Stormwater Pollution Prevention Plan (SWPPP). The SWPPP is an important tool used properly identify, assess, and implement best management practices (BMPs) and methods for pollutant source control.

F. General Conditions

Ecology bases the standardized General Conditions on state and federal law and regulations. They are included in all individual industrial NPDES permits issued by Ecology.

VI. PERMIT ISSUANCE PROCEDURES

A. Permit Modifications

Ecology may modify this permit to impose numerical limits, if necessary to comply with water quality standards for surface waters, with sediment quality standards, or with water quality standards for ground waters, after obtaining new information from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

Ecology may also modify this permit to comply with new or amended state or federal regulations.

B. Proposed Permit Issuance

This proposed permit includes all statutory requirements for Ecology to authorize a wastewater discharge. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the State of Washington. Ecology proposes to issue this permit for a term of 5 years.

VII. REFERENCES FOR TEXT AND APPENDICES

Atlas Castings and Technology

Internet Website. (http://www.atlasfoundry.com/)

Environmental Protection Agency (EPA)

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Kennedy/Jenks Consultants

2008. Engineering Report – Atlas New Heat Treat NPDES Permit. K/J 0896005.00.

2007. Atlas Castings & Technology – Stormwater Pollution Prevention Plan. K/J 0796014.00.

2000. Atlas Foundry and Machine Company – Preliminary Infiltration Assessment Results. K/J 996075.03.

1999. Atlas Foundry and Machine Company – Draft Engineering Report. K/J 976075.04.

1998. Atlas Foundry and Machine Company – Preliminary Infiltration Assessment Results. K/J 976075.02.

1998. Atlas Foundry and Machine Company – Sand Distribution System Assessment. K/J 976075.00.

1998. Atlas Foundry and Machine Company – Solid Waste Control Plan. K/J 976075.00.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Ecy Pub. No. 92-109.

1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems. Ecy Pub. No. 93-36.

1996. Implementation Guidance for the Ground Water Quality Standards. Ecy Pub. No. 96-02.

Laws and Regulations (http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information (http://www.ecy.wa.gov/programs/wq/wastewater/index.html)

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

Ecology proposes to reissue a permit to Atlas Castings & Technology. The permit prescribes operating conditions and wastewater discharge limits. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

Ecology placed a Public Notice of Application on June 9, 2008, and June 16, 2008, in the *Tacoma News Tribune* to inform the public about the submitted application and to invite comment on the reissuance of this permit.

Ecology will place a Public Notice on August 26, 2008, in the *Tacoma news Tribune* to inform the public and to invite comment on the proposed reissuance of this National Pollutant Discharge Elimination System permit as drafted.

The Notice –

- tells where copies of the draft Permit and Fact Sheet are available for public evaluation (a local public library, the closest Regional or Field Office, posted on our website.).
- offers to provide the documents in an alternate format to accommodate special needs.
- asks people to tell us how well the proposed permit would protect the receiving water.
- invites people to suggest fairer conditions, limits, and requirements for the permit.
- invites comments on Ecology's determination of compliance with antidegradation rules.
- urges people to submit their comments, in writing, before the end of the Comment Period
- tells how to request a public hearing of comments about the proposed NPDES Permit.
- explains the next step(s) in the permitting process.

Ecology has published a document entitled **Frequently Asked Questions about Effective Public Commenting** which is available on our website at http://www.ecy.wa.gov/biblio/0307023.html.

You may obtain further information from Ecology by telephone, 360-407-6280, or by writing to the permit writer at the address listed below.

Industrial Unit Permit Coordinator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, Washington 98504-7775

The primary author of this permit and fact sheet is John Y. Diamant, P.E.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- The acronym for "all known, available, and reasonable methods of prevention, control and treatment." AKART must be applied to all wastes and contaminants prior to entry into waters of the state in accordance with RCW 90.48.010 and 520, WAC 173-200-030(2)(c)(ii), and WAC 173-216-110(1)(a)..

Alternate Point of Compliance--An alternative location in the ground water from the point of compliance where compliance with the ground water standards is measured. It may be established in the ground water at locations some distance from the discharge source, up to, but not exceeding the property boundary and is determined on a site specific basis following an AKART analysis. An "early warning value" must be used when an alternate point is established. An alternate point of compliance must be determined and approved in accordance with WAC 173-200-060(2).

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Background water quality--The concentrations of chemical, physical, biological or radiological constituents or other characteristics in or of ground water at a particular point in time upgradient of an activity that has not been affected by that activity, [WAC 173-200-020(3)]. Background water quality for any parameter is statistically defined as the 95 percent upper tolerance interval with a 95 percent confidence based on at least eight hydraulically upgradient water quality samples. The eight samples are collected over a period of at least one year, with no more than one sample collected during any month in a single calendar year.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in receiving waters after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of the collection or treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring--Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor (DF)--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10 percent by volume and the receiving water 90 percent.

Distribution Uniformity--The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Early Warning Value--The concentration of a pollutant set in accordance with WAC 173-200-070 that is a percentage of an enforcement limit. It may be established in the effluent, ground water, surface water, the vadose zone or within the treatment process. This value acts as a trigger to detect and respond to increasing contaminant concentrations prior to the degradation of a beneficial use.

Enforcement limit--The concentration assigned to a contaminant in the ground water at the point of compliance for the purpose of regulation, [WAC 173-200-020(11)]. This limit assures that a ground water criterion will not be exceeded and that background water quality will be protected.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short a period of time as is feasible.

Ground water--Water in a saturated zone or stratum beneath the surface of land or below a surface water body.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL) --The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the pollutant concentration is above zero and is determined from analysis of a sample in a given matrix containing the pollutant.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7.0 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Point of Compliance--The location in the ground water where the enforcement limit shall not be exceeded and a facility must be in compliance with the Ground Water Quality Standards. It is determined on a site specific basis and approved or designated by Ecology. It should be located in the ground water as near and directly downgradient from the pollutant source as technically, hydrogeologically, and geographically feasible, unless an alternative point of compliance is approved.

Quantitation Level (QL) -- A calculated value five times the MDL (method detection level).

Responsible Corporate Office--A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Soil Scientist--An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

Soluble BOD5--Determining the soluble fraction of Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of soluble organic material present in an effluent that is utilized by bacteria. Although the soluble BOD test is not specifically described in Standard Methods, filtering the raw sample through at least a 1.2 um filter prior to running the standard BOD5 test is sufficient to remove the particulate organic fraction.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids--That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to receiving waters may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into receiving waters.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on Ecology's homepage at http://www.ecy.wa.gov.

COPPER PERFORMANCE-BASED EFFLUENT LIMITS

USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE

LOGNORMAL TRANSFORMED MEAN =	3.7664
LOGNORMAL TRANSFORMED VARIANCE =	0.6665
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =	1
AUTOCORRELATION FACTOR(ne)(USE 0 IF UNKNOWN) =	0
E(X) =	60.3182
V(X) =	3447.273
VARn	0.6665
MEANn=	3.7664
VAR(Xn)=	3447.273
MAXIMUM DAILY EFFLUENT LIMIT =	288.692
AVERAGE MONTHLY EFFLUENT LIMIT =	165.567
165.5671 156.9019	

Month	Copper (ug/L)	LN(x)		Month	Copper (ug/L)	LN(x)
Jan-03	81.00	4.394449		Sep-05	49.00	3.89182
Feb-03	130.00	4.867534		Oct-05	50.00	3.912023
Mar-03	46.00	3.828641		Nov-05	56.00	4.025352
Apr-03	19.00	2.944439		Dec-05	240.00	5.480639
Oct-03	6.00	1.791759		Jan-06	27.00	3.295837
Nov-03	10.00	2.302585		Feb-06	24.00	3.178054
Dec-03	120.00	4.787492		Mar-06	220.00	5.393628
Jan-04	110.00	4.70048		Apr-06	35.00	3.555348
Feb-04	110.00	4.70048		May-06	27.00	3.295837
Mar-04	22.00	3.091042		Sep-06	30.00	3.401197
Apr-04	190.00	5.247024		Nov-06	43.00	3.7612
May-04	59.00	4.077537		Dec-06	44.00	3.78419
Aug-04	85.00	4.442651		Jan-07	28.00	3.332205
Sep-04	110.00	4.70048		Feb-07	59.00	4.077537
Oct-04	18.00	2.890372		Mar-07	40.00	3.688879
Nov-04	30.00	3.401197		Apr-07	22.00	3.091042
Dec-04	53.00	3.970292		Jun-07	32.00	3.465736
Jan-05	41.00	3.713572		Jul-07	88.00	4.477337
Mar-05	38.00	3.637586		Sep-07	42.00	3.73767
Apr-05	32.00	3.465736		Nov-07	35.00	3.555348
May-05	9.00	2.197225		Dec-07	36.00	3.583519
Jun-05	18.00	2.890372		Jan-08	25.00	3.218876
Jul-05	20.00	2.995732		Feb-08	150.00	5.010635

Column1	
Mean	3.77
Standard Error	0.12
Median	3.70
Mode	4.70
Standard Deviation	0.82
Sample Variance	0.67
Kurtosis	0.05
Skewness	0.08
Range	3.69
Minimum	1.79
Maximum	5.48
Sum	173.25
Count	46.00

LEAD PERFORMANCE-BASED EFFLUENT LIMITS

USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE

LOGNORMAL TRANSFORMED MEAN =	0.8635
LOGNORMAL TRANSFORMED VARIANCE =	3.1049
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =	1
AUTOCORRELATION FACTOR(ne)(USE 0 IF UNKNOWN) =	0
E(X) =	11.2007
V(X) =	2673.037
VARn	3.1049
MEANn=	0.8635
VAR(Xn)=	2673.037
MAXIMUM DAILY EFFLUENT LIMIT =	142.894
AVERAGE MONTHLY EFFLUENT LIMIT =	43.040
43.04012	96.2495

Month	Lead (ug/L)	LN(x)		Month	Lead (ug/L)	LN(x)
Jan-03	0.01	-4.828314		Sep-05	2.00	0.693147
Feb-03	1.00	0		Oct-05	0.01	-5.298317
Mar-03	5.00	1.609438		Nov-05	2.00	0.693147
Apr-03	2.00	0.693147		Dec-05	240.00	5.480639
Oct-03	3.00	1.098612		Jan-06	20.00	2.995732
Nov-03	1.00	0		Feb-06	2.00	0.693147
Dec-03	14.00	2.639057		Mar-06	4.00	1.386294
Jan-04	4.00	1.386294		Apr-06	1.00	0
Feb-04	1.00	0		May-06	1.00	0
Mar-04	4.00	1.386294		Sep-06	1.00	0
Apr-04	3.00	1.098612		Nov-06	8.00	2.079442
May-04	1.00	0		Dec-06	5.00	1.609438
Aug-04	1.00	0		Jan-07	4.00	1.386294
Sep-04	9.00	2.197225		Feb-07	8.00	2.079442
Oct-04	1.00	0		Mar-07	3.00	1.098612
Nov-04	12.00	2.484907		Apr-07	1.00	0
Dec-04	10.00	2.302585		Jun-07	7.00	1.94591
Jan-05	14.00	2.639057		Jul-07	1.00	0
Mar-05	1.00	0		Sep-07	1.00	0
Apr-05	1.00	0		Nov-07	23.00	3.135494
May-05	1.00	0		Dec-07	14.00	2.639057
Jun-05	1.00	0		Jan-08	11.00	2.397895
Jul-05	1.00	0		Feb-08	1.00	0

Column1	
Mean	0.86
Standard Error	0.26
Median	0.69
Mode	0.00
Standard Deviation	1.76
Sample Variance	3.10
Kurtosis	4.85
Skewness	-1.16
Range	10.78
Minimum	-5.30
Maximum	5.48
Sum	39.72
Count	46.00

NICKEL PERFORMANCE-BASED EFFLUENT LIMITS

USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE

LOGNORMAL TRANSFORMED MEAN =	3.9439
LOGNORMAL TRANSFORMED VARIANCE =	0.7026
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =	1
AUTOCORRELATION FACTOR(ne)(USE 0 IF UNKNOWN) =	0
E(X) =	73.3441
V(X) =	5481.443
VARn	0.7026
MEANn=	3.9439
VAR(Xn)=	5481.443
MAXIMUM DAILY EFFLUENT LIMIT =	362.686
AVERAGE MONTHLY EFFLUENT LIMIT =	204.940
204.94 195.1346	

Month	Nickel (ug/L)	LN(x)		Month	Nickel (ug/L)	LN(x)
Jan-03	130.00	4.867534		Sep-05	50.00	3.912023
Feb-03	140.00	4.941642		Oct-05	85.00	4.442651
Mar-03	80.00	4.382027		Nov-05	61.00	4.110874
Apr-03	200.00	5.298317		Dec-05	360.00	5.886104
Oct-03	15.00	2.70805		Jan-06	51.00	3.931826
Nov-03	15.00	2.70805		Feb-06	54.00	3.988984
Dec-03	140.00	4.941642		Mar-06	53.00	3.970292
Jan-04	78.00	4.356709		Apr-06	22.00	3.091042
Feb-04	24.00	3.178054		May-06	26.00	3.258097
Mar-04	57.00	4.043051		Sep-06	28.00	3.332205
Apr-04	110.00	4.70048		Nov-06	41.00	3.713572
May-04	160.00	5.075174		Dec-06	60.00	4.094345
Aug-04	180.00	5.192957		Jan-07	33.00	3.496508
Sep-04	150.00	5.010635		Feb-07	78.00	4.356709
Oct-04	15.00	2.70805		Mar-07	60.00	4.094345
Nov-04	96.00	4.564348		Apr-07	23.00	3.135494
Dec-04	43.00	3.7612		Jun-07	27.00	3.295837
Jan-05	41.00	3.713572		Jul-07	180.00	5.192957
Mar-05	38.00	3.637586		Sep-07	44.00	3.78419
Apr-05	21.00	3.044522		Nov-07	38.00	3.637586
May-05	15.00	2.70805		Dec-07	30.00	3.401197
Jun-05	15.00	2.70805		Jan-08	26.00	3.258097
Jul-05	15.00	2.70805		Feb-08	160.00	5.075174

Column1	
Mean	3.94
Standard Error	0.12
Median	3.92
Mode	2.71
Standard Deviation	0.84
Sample Variance	0.70
Kurtosis	-0.78
Skewness	0.26
Range	3.18
Minimum	2.71
Maximum	5.89
Sum	181.42
Count	46.00

ZINC PERFORMANCE-BASED EFFLUENT LIMITS

USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE

			LOGNORMAL TRANSFORMED MEAN =				5.2342		
			LOGNORMAL TRANSFORMED VARIANCE =				0.6893		
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =							1		
	AUTOCORRELATION FACTOR(ne)(USE 0 IF UNKNOWN) =						0		
						E(X) =	264.7576		
						V(X) =	69554.943		
						VARn	0.6893		
						MEANn=	5.2342		
						VAR(Xn)=	69554.943		
			MAXIMUM DAILY EFFLUENT LIMIT =				1293.728		
			AVERAGE MONTHLY EFFLUENT LIMIT =				735.021		
			735.0211	698.5979					

Month	Zinc (ug/L)	LN(x)		Month	Zinc (ug/L)	LN(x)	
Jan-03	640.00	6.461468		Sep-05	44.00	3.78419	
Feb-03	330.00	5.799093		Oct-05	270.00	5.598422	
Mar-03	140.00	4.941642		Nov-05	210.00	5.347108	
Apr-03	94.00	4.543295		Dec-05	1600.00	7.377759	
Oct-03	360.00	5.886104		Jan-06	240.00	5.480639	
Nov-03	75.00	4.317488		Feb-06	120.00	4.787492	
Dec-03	330.00	5.799093		Mar-06	46.00	3.828641	
Jan-04	280.00	5.63479		Apr-06	180.00	5.192957	
Feb-04	160.00	5.075174		May-06	83.00	4.418841	
Mar-04	16.00	2.772589		Sep-06	120.00	4.787492	
Apr-04	260.00	5.560682		Nov-06	330.00	5.799093	
May-04	340.00	5.828946		Dec-06	260.00	5.560682	
Aug-04	360.00	5.886104		Jan-07	210.00	5.347108	
Sep-04	250.00	5.521461		Feb-07	390.00	5.966147	
Oct-04	140.00	4.941642		Mar-07	218.00	5.384495	
Nov-04	310.00	5.736572		Apr-07	120.00	4.787492	
Dec-04	160.00	5.075174		Jun-07	210.00	5.347108	
Jan-05	210.00	5.347108		Jul-07	700.00	6.55108	
Mar-05	56.00	4.025352		Sep-07	250.00	5.521461	
Apr-05	63.00	4.143135		Nov-07	200.00	5.298317	
May-05	61.00	4.110874		Dec-07	240.00	5.480639	
Jun-05	430.00	6.063785		Jan-08	160.00	5.075174	
Jul-05	77.00	4.343805		Feb-08	510.00	6.234411	

Column1	
Mean	5.23
Standard Error	0.12
Median	5.35
Mode	5.35
Standard Deviation	0.83
Sample Variance	0.69
Kurtosis	1.14
Skewness	-0.42
Range	4.61
Minimum	2.77
Maximum	7.38
Sum	240.77
Count	46.00

APPENDIX D--RESPONSE TO COMMENTS

The following comments were received by the Department of Ecology (Ecology) by Eisenhower & Carlson, PLLC on behalf of Bradken-Atlas (formerly AmeriCast Technologies, Inc.) on September 23, 2008. Ecology has provided responses to these comments and changes to the draft permit and fact sheet were made as noted below:

S1.D Discharge Limitations

Outfall 004 – Stormwater Discharge to Ground via Infiltration Pond

Comment 1

The effluent limitations for outfall #004 have been significantly altered to impose lower limits on Total Copper, Total Nickel, and Total Zinc. The Fact Sheet recites that the bases for these lower limits are "recent performance data from the facility which demonstrates improved control of copper, nickel and zinc pollution through implementation of best management practices and source control methods." While Atlas appreciates the recognition afforded to its efforts to control these pollutants, there is no explanation in the Fact Sheet as to how these lower parameters are necessary to satisfy the requirement for AKART ("all known available and reasonable [treatment] methods"). Atlas understands that the goal of AKART is to prevent and control the pollution of state waters as prescribed in RCW 90.48.010 and as interpreted by the state courts. Please explain how these more stringent limits on Copper, Nickel and Zinc are reasonably required by AKART given the fact that the current permit discharge limits have not had in an adverse impact on the waters of the state. In other words, please explain how the Department determined that AKART requires the more stringent limits.

Response 1

Ecology appreciates the hard work that Atlas has done to continue to improve BMPs and pollution source control measures. This is evident in technology-based limits in their previous permit which were based on performance and had larger discharge limits for total copper, total nickel, and total zinc. An up-to-date evaluation of monitoring data collected during the previous permit cycle shows that concentrations now achievable are lower. The discharge limitations to the infiltration basin are indicative of what's achievable through Atlas' use of BMPs and source control measures.

Since Atlas is a unique, permitted facility in Washington State, there are no other permitted facilities that are comparable to Atlas from which an industry-wide AKART Study can be developed which define what technology-based limits should be. Therefore, technology-based limits have been defined specifically for Atlas based on performance using previously collected monitoring data. Performance-based limits are a statistical calculation (defined by EPA (Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-001, March 1991) which provide a procedure to define maximum daily and average monthly limits based on existing performance data.

Facilities that are authorized to bypass a treatment system are dependent upon the continued use of BMPs and source control strategies to reduce the amount of pollutants being discharged into the waters of the State. By lowering the performance-based limitations, Ecology expects that Atlas continues to provide a high level of concentration on their BMPs and source control

measures to continue to, and further minimize the amount of pollutants that are being released during bypass events.

No changes were made to the permit.

S1.E Discharge Limitations

Groundwater Enforcement Limitations and Early Warning Values

Comment 2

The groundwater quality limitations as measured in the downgradient monitoring wells MW2 and MW3 have been significantly altered to impose lower limits for Total Nickel and Total Zinc. This despite the fact that during the course of the current permit limits there has been no demonstrated impact of any type to the receiving waters. The Fact Sheets recites that the bases for these lower groundwater quality limits are "to maintain the highest quality of the State's ground waters and to protect the existing and future beneficial uses of the ground water through the reduction or elimination of the discharge of contaminants toground water." The Fact Sheet states that the Department applied AKART, the antidegradation policy of the ground water quality standards and numeric and narrative criteria. Without explaining how these matters were applied in this instance, the Fact Sheet recites that the limits for Total Nickel and Total Zinc can be made more stringent based on the monitoring data under the current permit. Please explain how these more stringent limits for Total Nickel and Total Zinc are reasonably required by AKART and the antidegradation policy, especially given the fact that the current permit limits have not had an adverse impact on the waters of the state. In other words, please explain how the Department determined that AKART and the antidegradation policy require the more stringent limits to protect the existing ground water quality.

Response 2

Table 2 of the new Fact Sheet summarizes the maximum measured concentrations for monitoring wells MW1, MW2, and MW3; the applicable groundwater criteria; and the previously established enforcement limit and early warning values. MW1 has been designated as the upgradient (background) well. The new permit only places enforcement limits and early warning values on the downgradient wells (MW2 and MW3). This effectively eliminates the enforcement limits and early warning values for MW1 in the previous permit.

A comparison of the data versus the criteria show that bis(2-ethylhexyl)phthalate and pH have been measured to exceed the groundwater quality standards criteria. The exceedances to both of these criteria have been documented in the past to be caused by other factors and are due to an already degraded groundwater quality condition upgradient from the infiltration basin. Modifications to the previous permit have addressed these issues and have removed/revised permit limitations, appropriately.

A review of the copper, nickel and zinc data with the groundwater criteria shows that the numeric criteria are being met. However a review of the upgradient data (MW1) with the previous enforcement limit and early warning value shows that the previous enforcement limits and early warning values were not protective enough to uphold the antidegradation requirement of the groundwater quality standards for nickel and zinc. Ecology acknowledges that the numeric criteria are being met and there isn't an apparent problem with meeting the ground water antidegradation requirements at this time. However, if no changes were made, Atlas could

potentially be allowed to degrade groundwater quality and violate the antidegradation requirements in the future.

Ecology carefully reviewed Atlas' data and has decided to lower the enforcement limits and early warning values to levels where Ecology believes Atlas may be able to reasonably meet and would ensure better protection of upgradient groundwater quality. There should be no reason for Atlas to exceed, or be close to exceeding, the nickel and zinc enforcement limits and early warning values unless groundwater quality begins to be substantially degraded.

No changes were made to the permit.

S2.B Monitoring Requirements

Outfalls 001, 002, and/or 003 Bypass Monitoring

Comment 3

This section adds the new requirement that flow for bypass discharges by measured or estimated, apparently to enable the Department to calculate wasteloads discharged. This requirement will be difficult if not nearly impossible to meet. Atlas believes that accurate measurement of flow for bypasses is not reasonably and economically achievable in the foundry environment. This leaves Atlas with the alternative requirement to estimate flow. Please explain how the Department reasonably expects Atlas to estimate flow for bypasses at the outfalls. Because of the inaccuracies inherent in estimating flow with this new requirement, Atlas requests that the requirement to measure or estimate flow be eliminated.

Response 3

Ecology does not agree with Atlas' request to eliminate the requirement to measure or estimate flow. Ecology realizes that at this time, it is unrealistic to expect facilities to be able to manage/treat **all** industrial stormwater regardless of the size of the storm event. However, both the State and the Public are entitled to know the volume of untreated stormwater that is being bypassed directly to Commencement Bay during these high storm events. Furthermore, in order to better manage and improve water quality in the Puget Sound, it is important to estimate the pollutant loads from all of the various sources. For these reasons, Ecology's requirement to report the bypass flow makes sense and is reasonable.

Ecology realizes that this new requirement to report bypass flow may require the purchase and installation of flow monitoring which could be costly since the stormwater conveyance infrastructure is already constructed under pavement, roads, and buildings. As such, Ecology is allowing Atlas to estimate the volume of each bypass event. It is unreasonable to expect Ecology to provide Atlas with the best alternative to conduct these estimates. Such a recommendation should be made by the services of a professional consultant. Ecology believes that Atlas has many options available to estimate flow that may be less costly.

Comment 4

Additionally, this section adds the requirement to monitor bypasses for Total Suspended Solids without any discussion as to why this additional monitoring is required. Please explain why the Department proposed to require bypass monitoring for Total Suspended Solids.

Response 4

Total suspended solids (TSS) is an indicator parameter that is used to determine how effective a stormwater treatment system or best management practice is at controlling pollutants in stormwater. A maximum daily AKART (all known, available, and reasonable methods of prevention, control, and treatment) technology-based limit of 50 mg/L is commonly established for stormwater treatment systems. Ecology has noted that technology-based limits for TSS has not been established for Atlas and acknowledges the fact that Atlas relies upon best management practices (BMPs) to minimize/control pollutants before discharging to ground. Atlas depends on their infiltration basin as part of their stormwater treatment regime. The infiltration basin media binds and filters pollutants as the stormwater flows downward and the media is replaced routinely to ensure that it continues to have pollutant-binding capacity. However, to maintain consistency with other permitted dischargers, Ecology has determined that it is appropriate to require the collection of TSS data to begin building a database to evaluate how effective the BMPs are at the site, in the future.

A review of the permit shows an inconsistency with the TSS monitoring requirements and Ecology's intent to require the collection of TSS data for all discharge points. Special Condition S2.A, Outfall 004 – Stormwater Discharge to Infiltration Basin, did not include TSS monitoring whereas subsection S2.B to monitor bypasses does. Ecology has revised subsection S2.A to add TSS monitoring requirements.

S2.C Monitoring Requirements

Groundwater Monitoring

Comment 5

This section adds new requirements for monitoring groundwater. Specifically, there are new requirements to monitor conductivity, total iron, ferrous iron, and total dissolved solids. This represents additional significant analytical costs to Atlas, and the draft permit provides no discussion as to why these additional parameters must be monitored. Please explain why the Department reasonably requires the addition of these new requirements for monitoring groundwater.

Response 5

Conductivity, total and ferrous iron, and total dissolved solids are some of the basic indicator parameters of groundwater quality. Conductivity and total dissolved solids (as well as pH) provide information about what kinds of ions and anions are present in the water. Furthermore total dissolved solids criteria has been established in the groundwater quality standards (Washington Administrative Code (WAC) Chapter 173-200).

Likewise total iron has criteria established in the groundwater quality standards. Since the facility is a metal foundry, it makes sense to require monitoring for iron to ensure iron standards are being/will be met.

Ecology's second review of the ferrous iron monitoring requirement results in the decision to remove ferrous iron from the required groundwater monitoring schedule in the permit. Ferrous iron provides an indication of anoxic conditions that has more value in monitoring land

application of wastewater from agricultural industry where there are large amounts of oxygen-demanding wastes.

S5.C Solid Waste

Solid Waste Control Plan

Comment 6

Please clarify that the Department requires submittal of a modified Solid Waste Control Plan only when there have been major revisions or modifications to the plan, and not simply minor revisions or modifications such as changes to personnel or contact information.

Response 6

Ecology agrees to add the language proposed to further clarify the requirements of the Solid Waste Control Plan. The proposed modification was added to the permit by adding the modifier "substantial" to the permit language.